Environmental Defense Fund
Natural Resources Defense Council
California League of Women Voters
The Bay Institute
Friends of the River
Fresno Flyfishers for Conservation
California Sportfishing Protection Alliance
Wilderness Fly Fishers
Clean Water Action
Tuolumne River Preservation Trust
Pacific Coast Federation of Fisherman's Associations
Save San Francisco Bay Association
Sierra Club
Sierra Nevada Alliance
Mono Lake Committee
Golden Gate Audubon Society

April 15, 1998

Ms. Jeanine Jones
Executive Officer, Bulletin 160-98 Advisory Committee
Department of Water Resources
1416 Ninth Street, PO Box 942836
Sacramento, CA 94236-0001

Re: Economic Issues Associated with the Public Review Draft of The California Water Plan Update Bulletin 160-98 (January 1998).

Dear Ms. Jones:

The organizations listed above find that the Draft Bulletin 160-98, like previous versions of Bulletin 160, contains a serious and fundamental flaw: the lack of basic economic criteria to address the balance of supply and demand.[1] Without such criteria to determine what water management options are cost-effective, it is impossible, not only to plan efficiently for the future needs of California farms and cities, but also to integrate environmental objectives into our water management alternatives.

[1] Some of the signatories to this letter will submit additional comments on other aspects of the Draft Bulletin.

C-013330

The Draft Bulletin projects large amounts of future "demand" without assessing the willingness-to-pay on the part of those in the urban and agricultural sectors who would consume the water. Without such an assessment, of course, the total "demand" exceeds projected supply, and the Draft Bulletin can only conclude that there is significant need for new water development projects, including additional dams, to alleviate the "shortage".

California's existing water projects, which include thousands of dams and pumps which annually export 6 million acre-feet of water from the San Francisco Bay-Delta Estuary, have already caused a massive decline in our aquatic ecosystems, where a number of indigenous species teeter on the brink of extinction.[2] Given strong public support for the restoration of our beleaguered waterways, we find it especially outrageous that the Bulletin recommends the construction of additional dams without even adequate justification of their economic viability. If and when the construction of additional dams can be justified on economic grounds, a public discourse should be held to determine how to compare the benefits of developing additional supplies with those of protecting natural resources. Until then, however, the recommendations in Draft Bulletin 160-98 appear to be little more than an inferior rationale for dam-builders, who are concerned with protection of neither California's environment nor its economy.

The vast majority of the Draft Bulletin is the result of commendable effort on the part of the expert staff who have compiled a comprehensive and largely accurate document summarizing the current status of consumptive water use and ecosystem protection in California. We do not ask that this useful information be discarded, only that it be supplemented in some pertinent areas and presented in a way that accurately and clearly describes the range of available alternatives for managing California's water resources.

Recommendations

In accordance with the principles outlined above and described in more detail below, we recommend that the Department of Water Resources (DWR) correct the Draft Bulletin's most basic methodological flaws before releasing a final document, even if the schedule for release of the final version must be extended. Our recommendations include:

- Convene an independent panel of expert economists to review the Bulletin's economic methodology for projecting demands, supplies and shortages;
- For each of the Bulletin's regions, construct supply and demand "curves", showing how both the demand for and supply of new resources depend on cost; and,

[2] The federal Endangered Species Act currently lists winter-run salmon and Delta smelt as endangered and steelhead as threatened. Fall-, late fall-, and spring-run salmon, as well as Sacramento splittail, are currently proposed for listing under the ESA.

C-013331

- For the statewide and each of the projected regional "shortages", estimate and present the marginal cost of additional supplies.

Planning for the future water needs of California is an important and complex task. Let's start now with a simple set of tools which integrates sound economic principles and comprehensive environmental objectives. If we fail to do so, our water resource planning decisions, such as a CALFED preferred alternative which may cost BILLIONS of dollars, will benefit neither our economy nor our environment.

Convene an Expert Panel

DWR has defended the Draft Bulletin 160-98 and previous Bulletin 160s before it as adequate planning documents. We don't agree and find the continued propagation of proposals for new water projects, in light of California's devastated aquatic ecosystems and the Bulletin's lack of economic justification, to be unconscionable. We ask the Department, in cooperation with the environmental community and other stakeholders, to field a independent panel of expert economists to review the Draft Bulletin. Without such a review, the Bulletin's recommendations for water development will continue to have very little credibility.

Show How Supply and Demand Depend on Cost

Demand

Demand for every resource, including water, varies with price. If the cost of a resource is low, it is used liberally. If the cost of a resource is high, it is used more sparingly. Bulletin 160 does not characterize demand for water in such a way, but assumes that urban and agricultural sectors will both consume volumes water at rates that are often based on historic patterns (with urban use adjusted for population growth), independent of the cost of the water. Since water has traditionally been provided at low rates, often subsidized by public funds, many water users have not had incentives to use water efficiently. The willingness to consume less water given the correct economic signal has been illustrated in many areas of the state, where water has been transferred from one party to another which is willing to pay a market-based price.

Chapter 6 of the Draft Bulletin identifies "Best Management Practices" and "Efficient Water Management Practices" as standards for the urban and agricultural sectors respectively. While we commend the Draft for recognizing the important role of water conservation, these limits are somewhat arbitrary. For the purpose of comparative analysis, water conservation options should initially be evaluated on a cost basis analogous to that of traditional water development projects. When the negative externalities associated with these traditional development projects (e.g., the loss of riparian habitat due to the construction of dams) are taken into account, conservation options will be generally more attractive.

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The Draft Bulletin takes a very modest first step in developing an appropriate relationship between the cost of additional water supplies and the desire to consume water. The regional elasticities in demand for both urban and agricultural water, as presented in Tables 4A-2 and 4A-5, constitute a small piece of what could (and should) be expanded into a more useful *demand curve*. While we have unanswered questions regarding the how these elasticities were created, we note that the range of applicable prices and rates of consumption are too narrow and simplistic to be useful for general planning purposes.

Compared to the Draft Bulletin, the Central Valley Project Improvement Act's (CVPIA) Draft Programmatic EIS evaluates a comparatively broad range of the demand-price relationship, albeit only for CVP contractors. The PEIS projects that CVP demand would be reduced by 570 TAF by implementation of tiered pricing as specified by its alternative 1d.[3] We recommend that the Bulletin adopt a similar approach of evaluating a broad range of potential prices for water consumption in both the urban and agricultural sectors, especially where consumption is not currently influenced by price, because the cost of water is either subsidized or imbedded in fixed and/or other costs.

In contrast to using a willingness-to-pay approach, the Bulletin's "demand" assumptions for urban use in 2020 depend largely on an extrapolation of current "demand", which is based on current use. However, as the Pacific Institute shows in detail in its comments (Table 1) on the Bulletin 160-98 draft, actual use in 1995 is far less in many of the State's largest urban areas than the current "demand" reported by Bulletin 160.

We also note that recent trends in agricultural use do not reflect the projections from past Bulletins. As shown by the Environmental Defense Fund in its comments, Bulletin 160-83 projected an overall *increase* in agricultural crop-acreage of 814,000 (8% of the 1980 statewide total) between 1980 and 2010, but Bulletin 160-98 shows that crop-acres have instead *decreased* by 621,000 (6%) in the first half of that 30 year period.[4] While crop-acres do not correspond directly to water use, the overall statewide change, as well as significant shifts in the types of crops being grown, indicate that agricultural use adapts to changes in market conditions, both for the purchase of water and for the sale of crops, in ways that the Bulletin 160s have not successfully predicted.

Supply

The Bulletin's description of supply alternatives is slightly more comprehensive than its description of demand, and it appropriately recognizes the inherent uncertainty in many of the assumptions. We note, however, that the items listed in the transfer/banking/exchange category of regional options

[3] Alternative 1d assumes that 80% of CVP water would be sold at the "full-cost" rate of $60, compared to the current subsidized rate of $20/acre-foot, and that the remaining 20% be sold at slightly higher rates.

[4] Crop acreage is distinguished from total agricultural land use in that lands which produce two crops a year are counted twice.

C-013333

are limited to a small subset of all possible such options. The Bulletin should find a way to address transfers comprehensively --- most water users have a price at which they would be willing to reduce consumption.

We recommend that the data describing the cost and yield of various options (e.g., Table 7-13 for the San Francisco Bay region), also be presented in graphical format as a *supply curve*, similar to Figure A-1 in the Department of the Interior's Least-Cost CVP Yield Increase Plan. Presenting the supply and demand curves together would provide the public with useful information relating the cost of additional supplies with their willingness to pay, and would greatly facilitate the planning process.[5]

Groundwater overdraft should not be treated as a "shortage" but as a supply option, unless the basin is almost entirely depleted or imminently threatened by salinity intrusion. In most areas where groundwater overdraft is identified, substantial supplies of additional groundwater are yet available, albeit at increasing cost. The costs of retrieving additional groundwater, as well as other impacts such as land subsidence, should be evaluated alongside other supply-side and demand-side options, not dismissed as unacceptable.

Acquisitions (from water users to the environment) and transfers (from one water user to another) of water are assumed to reduce demand only in the few cases where they have already been identified and negotiations completed. The Bulletin should identify and estimate the potential for transfers and acquisitions to the same (or greater) extent that it does for potential new dams. Unfortunately, transfers and acquisitions are not given equal treatment in consideration as viable supply options.

Most egregiously, the Draft Bulletin assumes that the demand for environmental water under the CVPIA's b3 program will be met by acquisitions, and because the seller has not been identified, the Bulletin shows a shortage of approximately 800 TAF, a significant part of the statewide total "shortage". These acquisitions will either occur or not occur. If they do not occur, there will be no attempt to develop water to meet these demands. If they do occur, the demand will be reduced because the seller willingly forgoes consumption of a supply of water in exchange for monetary compensation. In either case, the b3 "demands" can not reasonably be characterized as part of a shortage.

Include Marginal Cost in the Bulletin's Water Budgets

The water budgets shown in Chapter 10 and Appendix 10 all project shortages (even with implementation of "recommended" options), without any acknowledgment of the marginal value of

[5] For example, The Bulletin projects that 441 TAF can be recycled in the South Coast region at a cost of less than $500/acre-feet (Table 7-32). There is no discussion or explanation of why only 186 TAF of this total is "likely to be implemented" (Table 7-33).

C-013334

water in a region. This simplistic characterization is unduly alarming to the general public, who are led to believe water will no longer flow from their faucets unless more projects are built.

The Bulletin would be much more useful if each table in Appendix 10A included a projection of the marginal cost of additional supplies (whether from conservation, recycling, transfers or development) in that region. If the budgets included cost data, they would show, in a much more clear way, the choices that we Californians have before us as we plan for the future management of our water resources.

Thank you for the opportunity to comment on the Draft Bulletin. There are many in the environmental community who would be pleased to work with DWR to incorporate the changes described above.

Sincerely,

Spreck Rosekrans
Environmental Defense Fund

Wendy Pulling
Natural Resources Defense Council

Peter Vorster
The Bay Institute

Polly Smith/Roberta Borgonovo
California League of Women Voters

Betsy Reifsnider
Friends of the River

Lawrence M. Naney
Fresno Flyfishers for Conservation, Inc.

C-013335

Richard Izmirian
California Sportfishing Protection Alliance

David Green
Wilderness Fly Fishers

Marguerite Young
Clean Water Action

Tim Ramirez
Tuolumne River Preservation Trust

Zeke Grader
Pacific Coast Federation of Fisherman's Associations

Cynthia Koehler
Save San Francisco Bay Association

Jackie McCort
Sierra Club

Laurel Ames
Sierra Nevada Alliance

Fran Spivy-Weber
Mono Lake Committee

Arthur Feinstein
Golden Gate Audubon Society

cc: Lester Snow, CALFED

C-013336